

Title: AUTHENTICATION AND DATA MANAGEMENT OF A BRAZILIAN COLLECTION OF ENVIRONMENTAL AND INDUSTRIAL MICROORGANISMS - CBMAI, UNICAMP.

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Abstract:

Microbial culture collections are conservation centers of ex-situ genetic resources, whose main functions are characterization, maintenance and distribution of microorganisms, in addition to providing information associated to them. The distribution of contaminated or misidentified biological material can lead to problems with serious consequences for its customers. Considering the rapid development of molecular tools geared to the taxonomic and evolutionary studies, and recent changes in classification, especially the ones applied to Fungi kingdom, the CBMAI is reassessing the identification of their strains in order to confirm and update their identities. In order to maintain the quality of CBMAI collection, the strains are being certified by phylogenetic analysis based on parts of genomic DNA and morphological description. Moreover, all data previously entered into the Information System for Collections of Biotechnological Interest, microSicol, are being reviewed. The isolates were grown, purified and then genomic DNA extraction, amplification and sequencing were made. Primers were used to amplify the USR and/or ITS regions for fungi, and SSU for bacteria. The consensus sequences were compared by phylogeny with Type cultures or internationally recognized collections, thus ensuring a reliable and updated authentication of the collection. Approximately 48% of the collection was revised and the data updated. The main genres analyzed until the present moment are: *Aureobasidium*, *Aspergillus*, *Cladosporium*, *Penicillium*, *Trichoderma*, *Streptomyces*, *Pseudomonas* and *Chromobacterium*. This present ongoing work has shown that this process is necessary and indispensable so the collections can guarantee the reliability of their identifications. Throughout the process was revealed that many of the taxa which were identified based on morphological characteristics, now were classified as belonging to different species, and other species shown that actually they were not described yet. Therefore, the microorganism authentication allows not only the right distribution of the strains, but also minimizes contamination issues and mistakes to its customers. Furthermore, the Collection Management software, microSicol, allows a reliable organization of data and quick access to information, also structuring an online catalog with a periodic update of the public access collection.

Keywords: Culture collection, microorganisms, microSicol, authentication

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